ABSTRACT OF THE DISCLOSURE

The present invention is directed to providing a full duplex communication system capable of providing actual wireless transmission rates on the order of 125 Mb/s, or higher, with relatively high transmission power on the order of 0.5 to 2 watts (W) or higher, with a high signal-to-noise(S/N) ratio, a bit error rate on the order of 10^{-12} or lower, 99.99% availability, and with relatively simple circuit designs. Exemplary embodiments can provide these features using a single compact and efficient, low distortion transceiver design based on high power (e.g., 0.5 W) monolithic millimeter wave integrated circuits (MMICs), having a compression point which accommodates high speed modems such as OC-3 and 100 Mb/s Fast Ethernet modems used in broadband networking technologies like SONET/SDH (e.g., SONET ring architectures having self-healing ring capability). By applying high power MMIC technology of conventional radar systems to wireless duplex communications, significant advantages can be realized. Exemplary embodiments have transmit operating frequencies in a fixed wireless spectrum of 18-40 GHz or wider, and produce a power output on the order of 0.5 W to 2 W or more, with a relatively simple circuit design.